WHAT IS CLAIMED IS:

1 A charging device comprising:

detecting means for detecting position information of a moving body;

deciding means for determining a charge applicable area in predetermined map information and for determining a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area, and matching the map information with the position information, and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area; and

generating means for generating charging information for the moving body based on a result of a decision by the deciding means.

2 The charging device according to claim 1, wherein the generating means is provided with storage means in which toll data that is determined in advance and corresponds to the entry state is stored in advance, and the charge information is generated using toll data of the storage means.

3 The charging device according to claims 1 or 2, wherein the charge applicable area is formed from at least a toll area and a non-toll area, and the

buffer area is set between the toll area and the non-toll area.

4 The charging device according to any of claims 1 to 3, wherein the charge applicable area is formed from at least a plurality of toll areas, and the buffer area is set between adjacent toll areas.

5 The charging device according to claim 4, wherein the plurality of toll areas contain toll areas that have different toll systems.

6 The charging device according to claim 5, wherein the buffer area is provided for each plurality of toll areas.

7 The charging device according to any of claims 1 to 6, wherein a toll for the buffer area is set based on a toll of one of adjacent areas.

8 The charging device according to any of claims 4 to 7, wherein a toll for the buffer area is set based on a toll of an area selected from a plurality of areas surrounding the buffer area.

9 The charging device according to any of claims 1 to 8, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means.

10 The charging device according to any of claims 1 to 9, wherein the generating means generates charge information relating to tolls determined based on a distance traveled in the charge applicable area.

11 The charging device according to any of claims 1 to 9, wherein the generating means is provided with storage means for storing a distance traveled in the charge applicable area when the distance traveled bridges a boundary between adjacent areas, and charge information is generated based on the stored distance traveled.

12 A charging device, comprising:

host moving body position detecting means for detecting a position of a host moving body;

storage means for storing data for charging relating to predetermined map information, charge applicable areas set in the map information, buffer areas set at boundaries between the charge applicable areas and areas other than the charge applicable areas, and the charge applicable areas;

determining means for matching the map information with the position, and for determining whether or not the moving body has at least

entered one of the charge applicable area and the buffer area; and

charge processing means for performing charge processing for a host moving body relating to the charge applicable area based on a result of a determination by the determining means.

13 The charging device according to claim 12, wherein the charge processing means performs charge processing using an IC card on which balance information is stored.

14 A charging device, comprising:

detecting means for detecting position information concerning the moving body;

adding means for determining a buffer area in which a moving body may be expected to move to from a detected position based on position information concerning the detected moving body, and adding the buffer area to the position information;

deciding means for deciding charge applicable areas in predetermined map information, for matching the position information to the map information, and for deciding an entry state indicating whether or not the moving body has at least entered the charge applicable area based on the

charge applicable areas and the buffer areas; and

generating means for generating charge information for the moving body based on a result of a decision by the deciding means.

15 The charging device according to claim 14, wherein the generating means is provided with storage means in which toll data that is determined in advance and corresponds to the entry state is stored in advance, and the charge information is generated using toll data of the storage means.

16 The charging device according to claims 14 or 15, wherein the detecting means detects position information concerning a moving body based on satellite data from a position finding satellite.

17 The charging device according to any one of claims 14 to 16, wherein the adding means sets the size of a buffer area based on a detection error by the detecting means.

18 The charging device according to any of claims 14 to 17, wherein the detecting means includes estimating means for estimating position information concerning a moving body based on at least one of a direction in which the moving body is traveling and a distance traveled by the moving body.

19 The charging device according to claim 18, wherein the adding means sets the size of a buffer area based on at least one of a direction in which the moving body is traveling and a distance traveled by the moving body used in the estimating means.

20 The charging device according to any one of claims 14 to 19, wherein the generating means generates charge information relating to tolls determined based on a distance traveled in the charge applicable area.

21 A charging device, comprising:

detecting means for detecting position information concerning the moving body;

deciding means for determining a charge applicable area in predetermined map information and for setting a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area or at a position of a moving body detected by the detecting means, and matching the map information with the position information, and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area; and

generating means for generating charging information for the

e moving body based on a result of a decision by the deciding means.

22 The charging device according to claim 21, further comprising adding means for determining a buffer area in which a moving body may be expected to move to from a detected position based on position information concerning the detected moving body, and adding the buffer area to the position information, wherein the deciding means uses a buffer area which has been added to the position information by the adding means when the deciding means is deciding the state of entry.

23 (Amended) A charging device mounted in a moving body comprising:

storage means for storing credit information;

reading and writing means for reading credit information from the storage means and for writing credit information in the storage means;

area inside or outside detecting means for detecting whether the moving body is inside or outside a charge area;

information handling means for generating the state information when the area inside or outside detecting means detects that its own position is inside the charge area when there is no state information indicating that its own position is inside the charge area, and thereafter if the detection of

whether the position is inside or outside the charge area changes from inside the charge area to outside the charge area, then the information handling means begins to measure how much time has passed, and if the detection of whether the position is inside or outside the charge area changes from outside the charge area to inside the charge area, then the information handling means makes the measurement of how much time has passed invalid and holds the state information continuously, and if a value for the measurement of how much time has passed exceeds a set value, then the information handling means deletes the state information; and

charge processing means for updating credit information in the storage means via the reading and writing means in accordance with a toll charged for the charge area while the state information was being held.

24 (Amended) A charging device mounted in a moving body comprising:

storage means for storing credit information;

reading and writing means for reading credit information from the storage means and for writing credit information in the storage means;

area inside or outside detecting means for detecting whether the moving body is inside or outside a charge area;

information handling means for generating the state information when the area inside or outside detecting means detects that its own position is inside the charge area when there is no state information indicating that its own position is inside the charge area, and for beginning to measure how much time has passed and holding the state information continuously, and thereafter, if a value for the measurement of how much time has passed exceeds a set value, then the information handling means deletes the state information when the area inside or outside detecting means detects that the position is outside the charge area; and

charge processing means for updating credit information in the storage means via the reading and writing means in accordance with a toll charged for the charge area while the state information was being held.

25 (Amended) A charging device mounted in a moving body comprising:

storage means for storing credit information;

reading and writing means for reading credit information from the storage means and for writing credit information in the storage means;

area inside or outside detecting means for detecting whether the moving body is inside or outside a charge area;

information handling means for generating and holding the state information when the area inside or outside detecting means detects that its own position is inside the charge area when there is no state information indicating that its own position is inside the charge area, and thereafter, if a period formed by a calendar unit greater than a day unit has passed, then the information handling means deletes the state information when the area inside or outside detecting means detects that the position is outside the charge area; and

charge processing means for updating credit information in the storage means via the reading and writing means in accordance with a toll charged for the charge area while the state information was being held.

26 (Amended) The charging device according to any of claims 23 to 25, wherein: the area inside or outside detecting means detects whether a position is inside or outside a plurality of charge areas; the information handling means generates state information for each charge area address; and the charge processing means updates credit information in the storage means via the reading and writing means in accordance with a toll charged for each charge area while the respective state information was being held.

27 The charge device according to any of claims 23 to 25, wherein the information handling means holds the state information in memory for holding information even while an ignition key switch is off.

28 (Amended) A charging device mounted in a moving body comprising:

storage means for storing credit information;

reading and writing means for reading credit information from the storage means and for writing credit information in the storage means;

area inside or outside detecting means for detecting whether the moving body is inside or outside a charge area;

information handling means for generating j state information when the area inside or outside detecting means detects that a position is inside the charge area j when there is no j state information indicating that the position is inside the charge area j, and deleting state information showing the position is inside other charge areas, and when the area inside or outside detecting means detects that a position is inside another charge area when there is no state information indicating that the position is inside another charge area, the information handling means generates charge information for other charge area addresses and deletes the j state information; and

charge processing means for updating credit information in the storage means via the reading and writing means in accordance with a toll charged for each charge area while the respective state information was being held.

29 The charge device according to claim 28, wherein the information handling means generates j state information when the area inside or outside detecting means detects that a position is inside the charge area j when there is no j state information indicating that the position is inside the charge area j, and thereafter if the detection of whether the position is inside or outside the charge area j changes from inside the charge area j to outside the charge area j, then the information handling means begins to measure how much time has passed, and if the detection of whether the position is inside or outside the charge area j changes from outside the charge area j to inside the charge area j, then the information handling means makes the measurement of how much time has passed invalid and holds the j state information continuously, and if a value for the measurement of how much time has passed exceeds a set value and if the area inside or outside detecting means detects that the position is inside another charge area , then the information handling means erases the j

state information and generates state information for the other charge area address.

30 The charge device according to claim 28 or 29, wherein the information handling means holds the state information in memory for holding information even while an ignition key switch is off.

31 (Amended) A charging device mounted in a moving body comprising:

storage means for storing credit information;

reading and writing means for reading credit information from the storage means and for writing credit information in the storage means;

area inside or outside detecting means for detecting whether the moving body is inside or outside a charge area;

information handling means for generating state information prescribing a charging frequency for a passage in the vicinity of an outer boundary of the charge area based on a result of a detection by the area inside or outside detecting means; and

charge processing means for updating credit information in the storage means via the reading and writing means in accordance with a toll charged for the charge area from the state information.

32 The charging device according to claim 31, wherein, when there are a plurality of the charge areas, the information handling means generates state information for each of the charge areas, and the charge processing means updates credit information in the storage means via the reading and writing means in accordance with a toll charged for each charge area from state information formed for each of the charge areas.